TOPIC NAME :

DAY

TIME : DATE / /

we will implement

- Initial permutation.
- final permutation.

Python code implementation:

```
def permutation(input_bits, permutation_box):
    return ''.join(input_bits[i-1] for i in
                   permutation_box)
```

```
IP_BOX = [ 58, 50, 42, 34, 26, 18, 10, 2,
           60, 52, 44, 36, 28, 20, 12, 4,
           62, 54, 46 38, 30, 22, 14, 6,
           64, 56, 48, 40, 32, 24, 16, 8,
           57, 49, 41, 33, 25, 17, 9, 1,
           59, 51, 43, 35, 27, 19, 11, 3
           61, 53, 45, 37, 29, 21, 13, 5
           63, 55, 47, 39, 31, 23, 15, 7]
```

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TOPIC NAME : DAY : TIME : DATE :

```
FP_BOX = [IP_BOX.index(i) + 1 for i in range(1,65)]

COMPRESSION_BOX = [ 14,17,11,24,1,5
                    3,28,15,6,21,10
                    23,19,12,4,26,8
                    16,7,27,20,13,2
                    41,52,31,37,47,55
                    30,40,51,45,33,48
                    45,49,39,56,34,53
                    46,42,50,36,29,32]

def demo(input_64bit_binary: str):
    print("orginal:        ", input_64bit_binary)
    ip = apply_permutation(input_64bit_binary)
    print("After IP: "      "", ip)
    final = apply_permutation(ip, FP_BOX)
    print("final permutation", final)
Sample_64: 0110111000101110001010010111"
```